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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte ANTON ESSER, RAINER BLUM,
JOACHIM KUHN, MARC LEDCU,
and RALF HEMEL

Appeal 2010-011924
Application 10/590,933
Technology Center 1700

Before CHARLES F. WARREN, BEVERLY A. FRANKLIN, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 1-15, 17 and 18. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b). Oral arguments were heard on October 26, 2011.

We AFFIRM.

Appellants' invention is said to be directed a process for the production of paper, board and cardboard by draining a paper stock containing interfering substances in the presence of polymers which contain

vinylamine units and which have an average molar mass of at least 1 million (Spec. 1:5-8).

Claims 1 and 9 are illustrative:

1. A process for producing paper, board or cardboard by draining a paper stock comprising interfering substances in the presence of polymers which comprise vinylamine units and which have an average molar mass M_w of at least 1 million, comprising preparing a high-consistency paper stock, metering at least one polymer comprising vinylamine units and having an average molar mass M_w of at least 1 million and a degree of hydrolysis of from 1 to 20 mol% into the high-consistency stock, diluting with water the high-consistency stock to a low-consistency stock, and draining the low-consistency stock.
9. A method for reducing deposits in at least one of the wire part, press section and drying section of a paper machine in the production of paper, board or cardboard, comprising adding at least one hydrolyzed homo- or copolymer of a N-vinylcarboxamide having a degree of hydrolysis of from 1 to 20 mol% and an average molar mass M_w [sic] of at least 1 million as an additive to a high-consistency stock consistency stock containing interfering substances.

Appellants appeal the following rejections:

1. Claims 1, 4-10, 13-15, 17, and 18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Burke (US 5,501,774 issued Mar. 26, 1996) in view of Hund (US 6,797,785 B1 issued Sep. 28, 2004).
2. Claims 1-15 and 17-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Auhorn (US 6,083,348 issued Jul. 4, 2000) in view of Burkert (US 4,444,667 issued Apr. 24, 1984) and Langley (US 4,753,710 issued Jun. 28, 1988).
3. Claims 1-3, 5-8, and 9 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting over copending Application No. 11/719,826 in view of Auhorn.

4. Claims 1-3, 5-6, and 8 are rejected on the ground of nonstatutory obviousness-type double patenting over Leduc (US 8,029,647 issued Oct. 4, 2011)¹ in view of Auhorn.
5. Claims 1-3, 5, 6, 8, and 9 are rejected on the ground of nonstatutory obviousness-type double patenting over Leduc (US 7,918,965 issued Apr. 5, 2011)² in view of Auhorn.

REJECTION (1)

ISSUE

Did the Examiner reversibly err in finding that the combination of Burke and Hund would have rendered obvious the use a vinylamine polymer having an average molar mass of at least 1 million? We decide this issue in the affirmative.

FINDINGS OF FACT AND ANALYSES

Appellants argue that neither Burke nor Hund alone or in combination, disclose or would have suggested the use of the particular polymers of the present invention, having the recited degree of hydrolysis range and minimum average molar mass, and the importance of metering

¹During oral argument Appellants notified the Board that application 11/574,677 has matured into US Patent 8,029,647 issued Oct. 4, 2011. Accordingly, we treat the rejection as simply an obviousness-type double patenting rejection over the claims of the issued patent. Appellants stated at the hearing that though this application has issued their arguments contained in the Brief remain the same.

²During oral argument Appellants notified the Board that application 12/065,688 has matured into US Patent 7,918,965 issued Apr. 5, 2011. Accordingly, we treat the rejection as simply an obviousness-type double patenting rejection over the claims of the issued patent. Appellants stated at the hearing that though this application has issued their arguments contained in the Brief remain the same.

such a polymer to high-consistency paper stock before it is diluted with water to become a low-consistency paper stock (App. Br. 7). We agree.

The Examiner relies on Burke to teach a polyamine coagulant that has a molecular weight of less than 2 million and thus overlaps Appellants' claimed molar mass range (Ans. 4). The Examiner relies on Hund to teach using vinylamine polymers as coagulants (Ans. 4). The Examiner concludes that it would have been obvious to use Hund's vinylamine polymer as the coagulant in Burke's process as a functionally equivalent coagulant for the benefits taught by Hund (Ans. 4).

However, the Examiner never explains how the combination of Burke and Hund teaches or would have suggested a vinylamine polymer having a molar mass within the claimed range. The Examiner appears to rely on Burke's teaching that the coagulant may be a polyamine as apparently the basis for the using Hund's vinylamine polymer as the polyamine. The Examiner points to no teaching in Hund regarding the molar mass of the vinylamine polymers (Ans. 3-5). The Examiner has not explained how or why it would have been obvious to control the polymerization process of Hund to produce a vinylamine polymer having a molar mass of less than 2 million as taught by Burke for use as a coagulant in Burke's process.

On this record, we agree with Appellants that there would have been no teaching or suggestion in the combination of Burke and Hund to produce a vinylamine polymer having the molar mass falling within Appellants' claimed range (i.e., at least 1 million). The Examiner has not satisfied the initial burden of presenting a *prima facie* case of obviousness. Accordingly, we reverse the § 103 rejection over Burke in view of Hund.

REJECTION (2)

Appellants separately argue claims 1 and 9 (App. Br. 12-14). Though Appellants separately list claims 5, 6, 10, 14, 15, and 18, we note that Appellants rest separate patentability on the mere argument that the subject matter of these claims is closer in scope to the “evidence of patentability” (App. Br. 13-15). However, no explanation has been provided of how the subject matter of claims 5, 6, 10, 14, 15, and 18 compares to the “evidence of patentability.” These arguments amount to reciting the subject matter of claims 5, 6, 10, 14, 15, and 18, which will not be treated as separate arguments. 37 C.F.R. § 41.37(c)(vii) (2010).

ISSUES

1. Did the Examiner reversibly err in determining that it would have been obvious to use Burkert’s vinylamine polymers in Auhorn’s process of making paper? We decide this issue in the negative.
2. Reconsidering the evidence of obviousness anew in light of Appellants’ evidence of nonobviousness, did the Examiner err in determining that the preponderance of the evidence weighs in favor of obviousness? We decide this issue in the negative.

FACTUAL FINDINGS & ANALYSIS

Issue (1)

Appellants argue that there is no reason to combine the teaching of Burkert and Auhorn absent hindsight (App. Br. 12-13). Appellants contend

that Burkert is directed to a flocculant for sludge not paper-making and the degree of hydrolysis of the vinylamine polymers is so broad (i.e., 10 to 90%) as to be meaningless (App. Br. 13).

We are not persuaded by these arguments for two reasons. First, the Examiner finds that Burkert is in the same patent family as EP-B-071050 referred to by Auhorn (Ans. 6). Appellants do not dispute this finding. Accordingly, Auhorn discloses using the vinylamine polymers of Burkert in the paper process. The Examiner uses this finding as a reason for using Burkert's vinylamine polymers with Auhorn's paper-making process, which Appellants do not specifically address (Ans. 7).

Second, Burkert's degree of hydrolysis overlaps the claimed range. We do not agree that the breadth of Burkert's hydrolysis disclosure renders such teachings meaningless or unimportant. Even a slight overlap in ranges between the claimed and prior art ranges typically would have rendered a claimed invention *prima facie* obvious. *In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003).

With regard to claim 9, Appellants contend that Auhorn in view of Burkert fail to teach a method for reducing deposits in at least one of the wire parts, press section and drying section of the paper machine (App. Br. 14).

However, the Examiner finds that the teachings of Auhorn and Burkert would have suggested the claimed process that uses vinylamine polymers having the particular molar mass and degree of hydrolysis (Ans. 5-7). Accordingly, it is reasonable to believe that the reduction in deposits on the paper machine would have flowed naturally from following the

teachings of the prior art. *Ex parte Obiaya*, 227 USPQ 58, 60 (BPAI 1985) (citing *In re Best*, 562 F.2d 1252 (CCPA 1977)).

For these reasons, we determine the Examiner has established a prima facie case of obviousness.

Issue (2): Secondary Considerations

Appellants contend that the evidence contained in the Specification on pages 7-8 and the Declaration of Anton Esser dated December 10, 2009 (hereinafter the “Esser Declaration”) establish that the claimed process of adding the claimed vinylamine polymers to the thick consistency portion of the process produces “superior” (i.e., “surprising” and “non-obvious”) results (App. Br. 12, 5-6, and 8).

We disagree for the reasons explained by the Examiner on pages 11 to 12 of the Answer.

Specifically, the Examiner considered Appellants’ evidence of nonobviousness in the Specification and Esser Declaration along with the evidence of obviousness (Ans. 11-12). In considering the evidence, the Examiner determined that evidence of nonobviousness did not outweigh the evidence of obviousness because declarant Esser did not allege that the results obtained were unexpected. We agree. The Examiner finds that Declarant Esser merely states that the results obtained were “good” (Ans. 12; Esser Dec. 3). Nowhere does Declarant Esser state that the results shown in the Esser Declaration were unexpected. *In re Soni*, 54 F.3d 746, 751 (Fed. Cir. 1995) (explaining that Appellants must state that the results achieved were “unexpected” as part of a showing of nonobviousness).

Appellants' attorney argument that the results obtained were "superior" or "surprising" is insufficient.

The Examiner further finds that the evidence Appellants provide is not commensurate in scope with the claimed invention (Ans. 12). The evidence focuses on a copolymer of vinylamine and N-vinylformamide with molecular weights substantially above the lower limit of the claim (i.e., 2,000,000) (Ans. 12). The claim merely requires "polymers which comprise vinylamine units" and a minimum molar mass is 1,000,000. Accordingly, Appellants' evidence does not establish unexpected results over the entire claimed range. *In re Clemens*, 622 F.2d 1029, 1036 (CCPA 1980).

In that respect, Appellants' evidence in the Specification and Esser Declaration compares polymers with molar masses substantially outside of the claimed range (e.g., PVAm 1, PVAm 2, PVAm 6) with polymers having degrees of hydrolysis and molar masses within the claimed ranges (e.g., PVAm 3, PVAm 5, PVAm 4). Absent from the evidence is any showing of the results obtained for vinylamine polymers having a degree of hydrolysis slightly outside the claimed hydrolysis range and molar masses near the claimed minimum molar mass or slightly within the claimed molar mass range. We are not persuaded that the evidence shows criticality or unexpected results in vinylamine polymers having the claimed molar masses and degrees of hydrolysis.

While the evidence in the Esser Declaration (Examples 2, 3, and 4 & Comparative Examples 4, 5, and 6) shows that adding the vinylamine polymers to the thick consistency material produces better retention of pitch particles, we note that the Examiner finds Auhorn teaches adding the vinylamine polymers to the thick consistency stock of the papermaking

process, which Appellants do not dispute (Ans. 6; App. Br. 12-13). Therefore, because Auhorn in view of Burkert teach adding the claimed vinylamine polymers to the thick consistency portion of the papermaking process, the evidence does not establish unexpected results over the teachings of the prior art. The particular property (i.e., pitch particle retention) may not have been recognized by the prior art, but based on the teachings of Auhorn and Burkert and the similarity of the materials and process, it is reasonable to expect that the pitch particle retention property would have flowed naturally from practicing the teachings of the prior art.

On this record, we affirm the Examiner's § 103 rejection over Auhorn in view of Burkert and Langley³.

REJECTIONS (3) TO (5): Obviousness-type Double Patenting

With regard to rejections (3) to (5) Appellants argue that the claims of the application and applications that are now patents fail to recite any distinction between the high consistency and low consistency stock (App. Br. 15, 16, and 17). Appellants further argue that the application, patents, and Auhorn neither recognize any significance with regard to the degree of hydrolysis nor the superior results obtained thereby (App. Br. 15-17).

The issue is whether Appellants' claims would have been an obvious variation of the claims of application 11/719,826 or patents 8,029,647 and 7,918,965 to Leduc in combination with teachings of Auhorn. We answer this question in the affirmative.

³ Langley is cited as evidence for the obviousness of dependent claims 4 and 13, which Appellants do not address (Ans. 7; App. Br. 13-15).

Appellants' arguments against the obviousness-type double patenting rejections are directed at the significance or criticality of the hydrolysis range. However, as noted above with our discussion of the secondary considerations, we do not agree that Appellants' evidence establishes that the claimed degree of hydrolysis is critical. Accordingly, we agree with the Examiner that Appellants' claims that include a hydrolysis range from 1 to 20 mol.% overlaps hydrolysis ranges between the claims of application 11/719,826 or patents 8,029,647 and 7,918,965 to Leduc and thus would have been an obvious variation.

With regard to Appellants' argument that the claims of application 11/719,826 or patents 8,029,647 and 7,918,965 to Leduc fail to recite adding the vinylamine polymer to the thick consistency, the Examiner relies on Auhorn to teach such a feature (Ans. 8-10, and 16). Appellants have not explained why Appellants' claims would not have been an obvious variation in light of the teaching of Auhorn in combination with the claims of application 11/719,826 or patents 8,029,647 and 7,918,965 to Leduc.

For these reasons, we affirm the Examiner's obviousness-type double patenting rejections.

DECISION

The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136.

ORDER

AFFIRMED

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